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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,255	02/27/2007	Tomonari Katoh	R2184.0526/P526	4794

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EXAMINER

NGUYEN, MATTHEW VAN

ART UNIT	PAPER NUMBER
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2838

MAIL DATE	DELIVERY MODE
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09/25/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/587,255	Applicant(s) KATOH ET AL.	
	Examiner MATTHEW V. NGUYEN	Art Unit 2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/26/06</u> . | 6) <input type="checkbox"/> Other: _____ |

1. The disclosure should be carefully reviewed and ensure that any and all grammatical, idiomatic, and spelling or other minor errors are corrected.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-13 are indefinite because in independent claim 1, lines 7-12, and independent claim 9, lines 6-9, "a second switching element including a second control electrode having capacitance larger than the capacitance of the first control electrode of the first switching element and an on-resistance smaller than the on-resistance of the first switching element" is contradicting to which described in the Specification, page 10, line 24 to page 6, line 2: "The second switching element M3 has an on-resistance larger than the on-resistance of the first switching element M1 and a gate capacitance smaller than the gate capacitance of the first switching element M1".

3. Claims 1-13 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

4. The following is an examiner's statement of reasons for allowance: none of prior art of record taken alone or in combination shows a a switching regulator and a method

thereof for converting an input voltage to a predetermined voltage and outputting the predetermined voltage to a load through an output terminal, comprising: a first switching element including a first control electrode, said first switching element performing switching according to a control signal input to the first control electrode and controlling outputting the input voltage; a second switching element including a second control electrode having capacitance larger than the capacitance of the first control electrode of the first switching element and an on-resistance smaller than the on-resistance of the first switching element, said second switching element performing switching according to a control signal input to the second control electrode and controlling outputting the input voltage; a control switching circuit part performing one of a PWM control on both of the first switching element and the second switching element and a PFM control only on the second switching element according to an operating mode so that a voltage output from the output terminal is the predetermined voltage; and a smoothing circuit smoothing a voltage output from each of the first switching element and the second switching element and outputting the smoothed voltage to the output terminal, wherein said control switching circuit part performs said PWM control to increase the voltage from said output terminal step by step from a predetermined first voltage to a second voltage when a first operating mode shifts into a second operating mode, and wherein in said first operating mode, said PFM control is performed and the output voltage from said output terminal is the predetermined first voltage, and in said second operating mode, said PWM control is performed and the output voltage from said output terminal is the second voltage that is larger than the predetermined first voltage as recited in the claims 1-13 of the instant application.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW V. NGUYEN whose telephone number is (571)272-2081. The examiner can normally be reached on 8 HOURS M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, AKM ULLAH can be reached on (571)272-2361. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MATTHEW V NGUYEN/
Primary Examiner, Art Unit 2838